

### REQUEST FOR RECONSIDERATION

Applicants thank Examiner Cintins for the indication in the Office Action of June 24, 2004 that the subject matter of Claims 1-3, 5-7, 9-11, 13-14, 17-18, 21-22 and 36 is allowed. Applicants further thank the Examiner for indicating that the subject matter of Claims 4, 8, 12, 15-16, 19-20, 23-32 and 37 would be allowed if rewritten to overcome the rejections under 35 U.S.C. §112. The claims have been amended accordingly herein.

Applicants further thank the Examiner for indicating that an interview to discuss the disclosure of the prior art references over which the present claims are rejected may be possible after the filing of a complete response to the Office Action of June 24, 2004.

The Office rejected Claims 33 and 35 under 35 U.S.C. §102(b) in view of Guilard (WO 96/11056). Applicants note that U.S. Patent No. 5,891,574 corresponds to the WO 96/11056 publication which is in the French language. In the present response to the Office Action of June 24, 2004, reference will be made to the U.S. Patent.

Present independent Claim 33 recites the following elements:

- (i) a column filled with a chelating ion exchange resin formed from a polyazacycloalkane fixed on a support,
- (ii) a means for causing a current of liquid to be treated to pass through the column,
- (iii) a means for conditioning the resin at a pH of 4 to 6, and
- (iv) a means for heating the resin to a temperature greater than or equal to 60°C.

The Office has asserted that Guilard discloses all of the elements of present independent Claim 33. Applicants traverse the Office's assertion.

The Office cites to the disclosure on page 36 that the claimed invention is anticipated by Guilard. Applicants traverse the assertion and submit that Guilard does not disclose at least the means for conditioning the resin at a pH of 4-6 or (see (iii) above) the means for heating the resin to a temperature of  $\geq 60^{\circ}\text{C}$  (see (iv) above).

In Example 13 at column 19, lines 13-20 of the U.S. Guilard patent it is disclosed:

The three cation types were then eluted by a 2 N nitric acid solution and the results obtained in the case of eluting uranium are shown in FIGS. 9 and 10.

Therefore Guilard does not disclose in Example 13 conditioning the resin at a pH of 4 to 6 but instead discloses that cations can be eluted with 2 N nitric acid solutions (see also page 39, lines 9-18 of the French text of Guilard). In contrast, on page 41, line 13 of the present specification it is disclosed, in one embodiment of the invention, that the conditioning may be carried out with a buffer solution.

Moreover, neither of Examples 14 or 15 of the English text of the Guilard patent discloses heating the resin to a temperature of greater than 60°C (see column 18, line 5 through column 21, line 15 of the U.S. Guilard patent).

The Examiner also cites to Example 12 of the French text of the Guilard publication as support for the assertion that the prior art disclosure anticipates the claimed subject matter. Applicants note however that Example 12 of Guilard is carried out in the static mode (see column 17, line 8 of English Guilard ). With respect to a comparison of static and dynamic mode, Applicants disclose the following in the present specification in the paragraph bridging pages 40 and 41:

In fact, the “static” exchange capacity of the resins is an important parameter, but for a method carried out in the dynamic mode on a column, the “dynamic” exchange capacity is the parameter that really shows the sequestering of properties of the resins studied. Therefore a static mode carried out in a flask is not comparable with a dynamic mode method carried out on a column.

Applicants submit that a static method cannot anticipate the claimed dynamic method.

Because the present claims require a means for causing a *current of liquid* to be treated to pass through a column, the claimed invention is implicitly carried out in a dynamic mode. In contrast, the methods carried out in a flask disclosed in Guilard are not carried out

on a stream of liquid and instead are carried out on a static basis. Thus the static methods of Guilard cannot render obvious or anticipate the dynamic methods presently claimed.

The Office cites to Figure 3 as evidence that Guilard discloses a means for heating the resin at a temperature of 60°C or greater. Applicants draw the Office's attention to the disclosure at column 16, lines 18-34 of the English Guilard patent where it is disclosed that the data of FIG. 3 are obtained by experiments carried out in flasks. As was mentioned above, an experiment carried out in a flask necessarily occurs in a static mode whereas the present claims necessarily require that the claimed method is carried out in a dynamic mode.

Applicants therefore submit that the Office has not shown a *prima facie* case of obviousness or anticipation as evidenced by the cited prior art's lack of disclosure of one or more of the present claim elements. Because the Office has not identified disclosure in a single reference of all of the present claim elements, the Office has not identified a basis for asserting that the presently claimed subject matter is anticipated.

Applicants submit the amendment to the claims places all now-pending claims in condition for allowance. Applicants respectfully request the withdrawal of the rejections and the passage of all now-pending claims to Issue.


Respectfully submitted,

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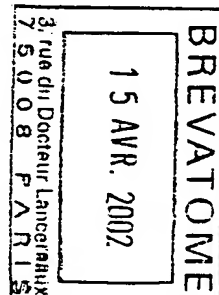
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Référence du dossier du déposant ou du mandataire B13276.3 PA	NOTIFICATION IMPORTANTE
Demande internationale no PCT/FR00/02374	Date du dépôt international (jour/mois/année) 25 août 2000 (25.08.00)
Déposant COMMISSARIAT A L'ENERGIE ATOMIQUE etc	

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**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>B13276.3 PA</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/FR00/02374</b>	International filing date ( <i>day month year</i> ) <b>25 August 2000 (25.08.00)</b>	Priority date ( <i>day month year</i> ) <b>27 August 1999 (27.08.99)</b>
International Patent Classification (IPC) or national classification and IPC <b>B01J 45/00</b>		
Applicant <b>COMMISSARIAT A L'ENERGIE ATOMIQUE</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.	
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.	
<input type="checkbox"/>	This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
These annexes consist of a total of _____ sheets.	
3. This report contains indications relating to the following items:	
I <input checked="" type="checkbox"/>	Basis of the report
II <input type="checkbox"/>	Priority
III <input type="checkbox"/>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV <input type="checkbox"/>	Lack of unity of invention
V <input checked="" type="checkbox"/>	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement
VI <input type="checkbox"/>	Certain documents cited
VII <input type="checkbox"/>	Certain defects in the international application
VIII <input type="checkbox"/>	Certain observations on the international application

Date of submission of the demand <b>10 February 2001 (10.02.01)</b>	Date of completion of this report <b>20 December 2001 (20.12.2001)</b>
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR00/02374

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
pages \_\_\_\_\_ 1-58 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages \_\_\_\_\_ 1-35 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the drawings:  
pages \_\_\_\_\_ 1/5-5/5 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No

PCT/FR 96/02374

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-35	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-35	NO
Industrial applicability (IA)	Claims	1-35	YES
	Claims		NO

## 2. Citations and explanations

## 1. Novelty

1.1 D1 (WO-A-96/11056) describes the use of ion-exchange resins of formula XV (see Claim 13) in methods for removing cations at pH values ranging from 5 upwards (see page 31, lines 16-25) and at various temperatures (see page 30, lines 15-20). However, D1 does not describe the temperature range "greater than or equal to 60 C", which appears in the wording of independent Claim 1. The claimed subject matter (Claims 1-32) is therefore novel (PCT Article 32(2)).

1.2 D2 (DE-A-40 21 046) describes an installation for removing cations comprising a column containing an ion-exchange resin, means for storing the resin at a pH of 4 to 6, and means for heating the resin to temperatures greater than 60 C (see Claim 9, line 6, and column 5, lines 2-8). However, D2 does not describe that the column is filled with "the chelating ion-exchange resin consisting of a polyazacycloalkane grafted on a solid support". Consequently, the claimed subject matter (Claims 33-35) is novel (PCT Article 33(2)).

## 2. Inventive Step

A person skilled in the art, being aware of the teaching of D1 and D2, would not need to exercise inventive skill in order to arrive at the claimed subject matter, because it is well known that:

2.1 since ion-exchange reactions are equilibrium reactions they are activated by an increase in temperature (in other words: it is within the general knowledge of a person skilled in the art that the increase in temperature leads to an increase in the equilibrium constant of exchange reactions and hence to an increase in the capacity of the resins).

2.2 A person skilled in the art having used the apparatus described in D2 could also use it with other exchanger resins, namely those used in D1, without having to exercise inventive skill.

The remaining technical features mentioned in dependent Claims 2-32, 34 and 35 would be well-known to a person skilled in the art (see description and claims of D1 and D2).

In the absence of any evidence that the independent claims have at least one technical feature distinguishing them from D1/D2 which can be considered to be responsible for solving, in a non-obvious manner, a technical problem that is not solved by D1 and/or D2, the claimed subject matter will never be able to be considered to involve an inventive step. The description contains no such reference to subject matter which is inventive in relation to D1, D2 and the general knowledge of a person skilled in the art.